

overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented recess, said recess enclosing said flange extremity and said abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of fixing means comprising in at least one place bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

14. A coupling according to claim 13 wherein said flange extremity is a separate ring.

15. A coupling according to claim 13, wherein the ring halves, besides said bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

16. A coupling according to claim 13, herein the first end portion comprises a tubular insert coupled between a tubular section and said second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over said tubular section whereas the opposite insert end is a ring over which said second end portion can slide.

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17. A coupling according to claim 13, wherein the length of the overlap portion between the first and second tube portions is 50% or less, preferably 30% or less, more preferably 20% or less of the inner diameter of the first portion.

18. A coupling according to claim 13, wherein the length of the overlap portion between the first and second end portions is 5% or more of the inner diameter of the first portion.

19. A coupling according to claim 13, wherein the coupling is a high vacuum or ultra-high vacuum coupling.

20. A coupling for a cylindrical sputtering target for end portions of two tubular sections, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on said first end portion, the coupling comprising at least one sealing ring between said end portions in their overlapping contact area and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of two substantially equal halves, each clamp half having a semi-circular or U-shaped cross section with an inwardly oriented recess, said recess enclosing said flange extremity and said abutment ring and being adapted to positively, solidly and axially clamp the abutment ring against the flange extremity, the two ring halves being fixed to each other at their extremities by means of fixing means comprising in at least one place bolting means,

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the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

Sub 0.31. A coupling for a cylindrical sputtering target according to claim 20 wherein said flange extremity is a separate ring.

Sub 0.32. A coupling for a cylindrical sputtering target according to claim 20, wherein the ring halves, besides said bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

Sub 0.33. A coupling for a cylindrical sputtering target according to claim 20, wherein the first end position comprises a tubular insert coupled between a tubular section and said second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over said tubular section whereas the opposite insert end is a ring over which said second end portion can slide.

Sub 0.34. A coupling for a cylindrical sputtering target according to claim 20, wherein the length of the overlap portion between the first and second tube portions is 50% or less, preferably 30% or less, more preferably 20% or less of the inner diameter of the first portion.

25. A coupling according to claim 20, wherein the length of the overlap portion between the first and second end portions is 5% or more of the inner diameter of the first portion.
26. A coupling for a cylindrical sputtering target according to claim 20, wherein the coupling is a high vacuum or ultra-high vacuum coupling.
27. The coupling for a cylindrical sputtering target according to claim 20, wherein the fixing means of the clamping ring is located on the side of the coupling remote from the sputtering target.
28. The coupling for a cylindrical sputtering target according to claim 20, further comprising an anti-arcing element.
29. The coupling for a cylindrical sputtering target according to claim 28, the anti-arcing element being attached to a surface of the clamping ring on the same side as the sputtering target for preventing arcing.
30. The coupling for a cylindrical sputtering target according to claim 28, wherein the anti-arcing element is conductive or insulating.
31. The coupling for a cylindrical sputtering target according to claim 28, wherein at least one groove is provided between the anti-arcing element and the clamping ring.